

## REMARKS

Applicant has filed the present Amendment and Response in reply to the outstanding Official Action of May 3, 2007, and the Applicant believes the Amendment and Response to be fully responsive to the Official Action for at least the reasons set forth below in greater detail.

At the onset, Applicant notes that Claims 1, 40 and 42 have been amended herewith to clarify the phrase “highly significant bit signals”. The term highly means “**most**” significant bit or MSB. No new matter has been added to the application by way of the aforementioned amendment.

Claims 1-7 and 42 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Chee (previously cited) in view of Chen et al., U.S. Patent No. 6,538,647 (hereinafter “Chen”). This is a new ground for the rejection.

Applicant respectfully disagrees with the rejections and traverses with at least the following analysis.

Applicant submits that the hypothetical combination of references fails to teach or render obvious, each and every limitation of the claims.

Chen teaches a display driver where MSBs are applied to analog voltage drivers. While Chen discloses that MSBs are used for displaying the image, Chen fails to teach two modes of operation. Chen only discloses one mode of operation, i.e., a low power LCD data driver. The claim specifically recites two modes of operation.

Additionally, there is no motivation to combine the references. § 103 requires a motivation to combine references. The Examiner avers that one of ordinary skill in the art would be motivated to combine Chen and Chee because they enable power savings using the MSB

saves power. However, Chen does not teach that using the MSB saves power. Chen only notes that the MSB is the brightness information.

Rather, Chen teaches that the reduced power **is achieved using a stepwise charging**. The abstract states that a power-saving data driver for stepwisely applying alternative driving voltages is disclosed. A given pixel is stepwisely driven from a driving voltage of the last pixel to a driving voltage of the given pixel as a target voltage. Chen describes in several places that **the power dissipation of the data line driver can be largely reduced by means of the stepwise charge**. Chen states “in order to reduce the power dissipation, the method of stepwise charge and discharge is applied in the present invention.” *See* Col. 3, lines 54-57. Further, Chen describes a relationship between the number of steps and the power dissipation. *See* Col. 3, lines 58-66.

Furthermore, Chen does not suggest that using the MSB reduces power (instead of all bits). In fact, Chen does not even mention a reason why the reference only uses MSBs.

Additionally, Chen teaches a system and method for reducing the power in any mode, rather than a power saving mode (as opposed to a normal driving mode). In other words, Chen does not suggest using the MSB for display only in reduced power mode and not in nominal driving mode. Once again, the low power driver is achieved using a stepwise charging.

Chee also fails to teach that in the power saving mode, voltages corresponding to most significant bit signals of said image display data are applied as display data signals to the data electrode, as recited. Chee teaches that an image can be displayed on the LCD using a reduced gray-scale. Chee teaches that the reduced gray scale reduces the number of bits per pixel of the display. In the disclosed embodiment in Chee, the reduced gray scale includes a reduced scale of

shades of gray using a two-bit data signal. Applicant notes that the reference fails to teach or describe how the two bits are selected, i.e., bits used in reduced gray scale.

Accordingly, the references, whether taken alone or in any combination thereof, fail to teach, suggest or render obvious all of the limitations of Claim 1. Therefore, Claim 1 is patentably distinct from the cited references.

Applicant further submits that Claims 2-7 and 42 are patentably distinct from the cited references based at least upon the above-identified analysis in view of their dependency, whether directly or indirectly, from Claim 1.

Applicant further submits that Claims 2 and 5 are separately patentable over the cited combination.

Claim 2 recites, *inter alia*, **essential information display mode**, wherein a **predetermined uniform voltage level**, which corresponds to a predetermined **color** and which is **independent** from said image display data, is **uniformly applied to all data electrodes on other regions than at least a designated region for displaying the essential information** (Emphasis Added).

The references fail to teach displaying the required items, i.e., essential information display mode. In fact, the references do not even mention a designated region for displaying essential information. Chee teaches that **all images** are treated the same. Chee does not teach multiple regions, each region being treated differently.

The Examiner asserts that Chee, at Col. 5, lines 37-65, teaches this feature. Nowhere in the identified section is there a teaching of the essential information display mode. The identified section describes a reduced power saving mode, including an LCD back light off and LCD

display off function. Additionally, the identified section describes a four-level power saving controller.

The four levels are (1) on, (2) standby, (3) suspend and (4) off. Furthermore, Chee teaches reducing the gray scale level for the **entire LCD**.

The reference teaches that power could be saved by completely shutting the display off, having the pixel clock slowed, displaying the images at a dimmed level or a reduced gray scale. None of the described power saving modes teaches displaying essential information.

The Examiner also cited Col.7, lines 9-44. Similarly, the identified section fails to support the Examiner's position.

Additionally, in Chee, when the pixel clock is slowed, when the gray scale is reduced or when the images are dimmed, the change is applied to the **entire display**. In other words, none of the power saving modes in Chee includes an essential information display mode or region for displaying essential information. Chee teaches **one display region whereas in the claimed invention there can be more than one display region**.

Moreover, the Examiner asserts that Chee discloses that a uniform voltage level is applied which corresponds to a predetermined color (Col. 5, lines 37-65) and is independent from the image display data Col. 7, lines 9-44. The identified section does not even mention a predetermined color or any independence from the image display data. Therefore, the reference does not teach that the color is independent from the image display data. Chen fails to cure the identified deficiencies.

Applicant also submits that Claim 5 is patentable over the cited references based at least upon the same reasoning as Claim 2. The references, whether taken alone or in any combination thereof, fail to teach, suggest or render obvious, the limitation of “ a uniform scanning signal is

simultaneously applied to all scanning electrodes on other regions than said at least designated region for displaying the essential information,” as recited in Claim 5.

Applicant also submits that Claims 3 and 4 are separately patentable over the cited combination.

Applicant submits that the Examiner is misunderstanding the terms “normally white type” and “normally black type”. These terms refer to the type of display and not on or off feature of the display. The normally white or black refers to the state of the display when no voltage is applied. A normally white type crystal display is high in transmittivity under non voltage (normally black is just the opposite).

Chee does not teach or suggest a normally white type display or a normally black type of display.

Applicant also submits that Claim 6 is separately patentable over the cited combination. Claim 6 recites, *inter alia*, wherein at least a partial color display region in said color display is displayed in said power saving mode. Chee discloses a reduced gray scale mode, not a partial color display mode. Chee teaches a full color mode and a reduced gray scale mode. A partial color display mode is not equivalent to a reduced gray scale mode.

Applicant submits that Claim 7 is also separately patentable over the cited combination. The prior art references fail to teach or suggest that in power saving mode, a polarity selecting circuit is inactivated.

*Pro arguendo*, even if the Examiner’s position that Chen discloses a lower power mode is correct, Chen teaches away from inactivating the polarity selecting circuit. Chen clearly teaches controlling the polarities of the voltages. Therefore, the combination does not teach inactivating the polarity circuit.

Claims 39-41 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Chee, in view of Chen, and in further view of Kim.

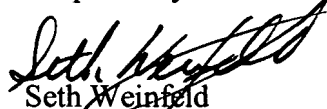
Applicant disagrees with the rejection of Claims 39 and 40. The rejection of Claim 41 is moot since the claim is cancelled.

Furthermore, Applicant disagrees with the rejection of Claims 39 and 40 based at least upon the analysis with respect to Claim 1 in view of their dependency, whether directly or indirectly, from Claim 1.

Based upon the foregoing, Applicant respectfully requests that the Examiner withdraw the rejection of Claims 1-7 and 39, 40 and 42 pursuant to 35 U.S.C. § 103(a).

In conclusion, the Applicant believes that the above-identified application is in condition for allowance and henceforth respectfully solicits the Examiner to allow the application. If the Examiner believes a telephone conference might expedite the allowance of this application, the Applicant respectfully requests that the Examiner call the undersigned, Applicant's attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,



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